

STUDENTS' USAGE OF GENAI IN UNIVERSITIES OF APPLIED SCIENCES: EXPERIENCES AND DEVELOPMENT NEEDS FOR GUIDANCE AND SUPPORT

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This article explores University of Applied Sciences students' awareness and use of GenAI, as well as their experiences with institutional guidelines and educator support. At the time of data collection, these institutions were in the early stages of GenAI adoption. A survey of 160 students revealed varied uses of GenAI and suggested that a notable proportion of students perceived the guidelines, and their delivery as unclear or inconsistent. Our results indicate that GenAI usage is not yet fully addressed in course-level practices, which may contribute to fragmented and inconsistent use of the technology among students. Moreover, students were more likely to seek help from peers than from educators when encountering difficulties with AI applications, which may reflect students' perceptions of the limited availability of educator support. The findings support previous research that there is a need for increased awareness of GenAI use in higher education among both students and educators. The study highlights the need for strengthening the role of educators in encouraging and influencing how their students perceive and adopt GenAI technology.

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1 Introduction

The rapid development of Generative Artificial Intelligence (GenAI) is reshaping higher education (HE) pedagogy, requiring continuous adaptation from both educators and students (Crompton & Burke, 2023; Kasneci et al., 2023; Peres et al., 2023). This adaptation is particularly relevant for Universities of Applied Sciences (UAS), which focus on partnering with industry and integrating work experiences to meet workforce needs more effectively than traditional universities (Virolainen et al., 2024; Carvalho et al., 2019). UASs' incorporate GenAI technologies into their education, supporting their mission to train students to meet the needs of future workplaces. This prepares students more effectively for society (Arene, 2024). While increasing numbers of students and faculty are using GenAI (e.g. An et al., 2025), clear strategies and guidelines for the use and integration of GenAI into learning practices are thus needed to ensure effective and safe integration into their curricula and practices (Moorhouse et al., 2023). As a key driver of digital transformation, AI is increasingly shaping teaching, learning, and assessment, highlighting the need to examine the evolution of GenAI and its potential to transform traditional pedagogical practices (Ruiz-Rojas et al., 2023, 2024; Crawford et al., 2024; Eager & Brunton, 2023; Atchley et al., 2024). GenAI is a branch of artificial intelligence (AI) that generates human-like content—including text, images, video, music, and code—by analyzing patterns in training data (Baidoo-Anu & Ansah, 2023). A defining feature of these applications is their ability to generate contextually appropriate responses to user prompts (Peres et al., 2023). These systems use sophisticated deep-learning techniques to identify and replicate underlying linguistic patterns and structural elements in the text. In practice, GenAI enables personalisation of learning, the automation of content production, and the support of students' creative processes (Barrett & Back, 2023; Tlili et al., 2023; Hu, 2024). Its potential goes beyond student engagement and interaction - it is reshaping teaching methods and educational content creation (Chen et al., 2020; Kasneci et al., 2023; Onesí-Ozigagun et al., 2024) enabling customized learning materials thus promoting interactive and pedagogically engaging learning experiences (Crawford et al., 2023).

Previous research calls for more education-focused AI studies, noting that most AI researchers' engineering backgrounds lead to a focus on technology rather than educational aspects (Chiu et al., 2023). While GenAI has significant potential, its implementation in HE is still in its early stages, facing several challenges that require

research, such as the readiness of students, educators, and higher education institutions (HEIs) to utilize GenAI (UNESCO, 2023). This study aims to understand how students use GenAI tools in their studies as well as students' experiences with their institutional guidelines and support received with the use of GenAI. The context, two Finnish University of Applied Sciences (UAS) institutions engaged in the early adoption phase, and at the same time, Finland's UAS sector was updating recommendations for GenAI use in education (Arene, 2024) making this investigation timely and relevant as institutions aligned their GenAI policies. This study specifically focuses on the following research questions:

RQ 1 What is the level of GenAI's awareness and usage among UAS students?

RQ 2 What are the experiences of UAS students regarding their institutional guidelines and the support received concerning the use of GenAI?

RQ3 How are students' experiences with institutional guidelines and educator support related to whether they have studied GenAI?

2 Background

Many studies on students' expectations and experiences of using GenAI have already been carried out in different HE contexts (e.g. Almaraz-López et al., 2023; Hwang & Tu, 2021; Lemke et al., 2023) particularly exploring the use of GenAI applications such as chatGPT (Johnston et al., 2024; Ravšelj et al., 2025). Systematic scoping reviews have revealed that students use ChatGPT as a personal tutor for various learning purposes, including content explanation, feedback, and structuring writing (Deng et al., 2025). In higher education, there have been discussions about how students perceive GenAI merely as a tool, and how educators in HE categorize its use as plagiarism (Ibrahim et al., 2023). Even though HE students could recognize the potential of GenAI tools, a significant number of them possibly avoid the use of GenAI in academic contexts due to the fear of sanctions or uncertainty regarding its permissibility (Baidoo-Anu et al., 2024; Luo, 2024a; Luo 2024b). A common vision of how GenAI can best serve HE and what its role should be is needed.

Research highlights the importance of upskilling both educators and students to effectively integrate GenAI into teaching and learning processes (Chan & Lee, 2023; Chan & Tsi, 2024). Educational programs have been used to enhance students' GenAI skills, with promising results suggesting that those who attend university-led training feel more confident and motivated to adopt GenAI tools. (e.g. Southworth et al., 2023). However, it seems that much still is needed in students' proper adoption and understanding of the possibilities of GenAI. A comparative study by Abdelwahab et al. (2023) on business students revealed that the awareness of GenAI is insufficient for fully understanding its implications for themselves or their future careers. Almaraz-López et al. (2023) found that while university business students were aware of GenAI and eager to learn more, their knowledge remained limited due to inadequate training. Despite students' expectations for strong GenAI expertise and clear guidance from educators, limited staff competence and the lack of university-wide policies may hinder its adoption (Michel-Villarreal et al., 2023; Chiu et al., 2023; Bissessar, 2023; Johnston et al., 2024). Similarly, a preliminary Finnish study found that UAS students expect educators to provide guidance and permissions regarding GenAI use (Suonpää et al., 2024). Bearman & Ajjawi (2023) note that clear institutional GenAI guidelines set boundaries and standards, fostering awareness of its potential and limits in education, which in turn guides ethical and effective usage by students. Baidoo-Anu et al. (2024) thus highlight frequent concerns about inconsistent GenAI messaging across various departments in HE, emphasizing the need to explore the situation from students' perspectives.

Many academic institutions and stakeholder groups closely associated with HE have developed recommendations and principles for using GenAI, and in particular, how assessment practices should be reformed (Lodge et al., 2023). Sabzalieva & Valentini (2023) authored UNESCO's Quick Start Guide to ChatGPT and AI in HE, designed to quickly orient educators, though its recommendations target institutional leaders rather than students and educators. (Pratschke, 2024). According to Moorhouse et al. (2023) HEI's GenAI use guidelines for educators mainly cover three main areas: academic integrity, advice on assessment design and communicating with students, however under half of the institutions had developed these kinds of publicly available guidelines by 2023 (Moorhouse et al. 2023). It seems today that the majority of institutional guidelines of HE is rather embracing the GenAI technology than banning it (Xiao et al. 2023; McDonald et al., 2024). Arene (2024), as the coordinator of Finnish UAS rectors, released guidelines for students and educators on using

GenAI in studies, encouraging HEIs to guide its use in student learning activities (Arene, 2024).

There is a lack of systematic knowledge on how HEI's adopt mechanisms to promote GenAI among students. Additionally, there are few comprehensive studies on how institutional guidance shapes students' GenAI experiences and usage (Almassaad et al., 2024). Research is needed particularly in the context of UAS. Both students and educators may often struggle to interpret and apply GenAI guidelines consistently, leading to uncertainty and variation in practice (An et al., 2025). Unclear institutional policies on academic misconduct even allow students to justify behaviors they might otherwise deem unethical (Mulder et al., 2015). There is also a lack of knowledge about how these recommendations are translated into actual teaching practice and guidance activities. It is therefore important to not only identify the various ways in which students use GenAI, but also to understand the factors driving its use, such as the guidance from educational institutions and support from educators.

3 Context and methodology

Data collection targeted two UASs in Finland which shared a need for a baseline study to investigate students' use of GenAI and to monitor changes over two years., aligning with ongoing policy updates and GenAI implementation strategies in the HE. The survey included multiple-choice questions and Likert-type scale items. The items covered GenAI awareness and usage, experiences with institutional guidelines and educator support, as well as students' learning and support-seeking behavior.

The survey instrument was partially informed by the TEK [Trade union for academic engineers and architects in Finland] Student Survey: AI in Studies (2023), which explored technology students' experiences with GenAI tools in HE. Selected statements adapted from the TEK survey and analysed in this study focused on the usage of GenAI among UAS students (Table 2), its applications (Figure 1), and students' experiences with institutional guidelines and practices (Table 3). The survey was also partially informed by established frameworks of studies by Yilmaz et al. (2023) and Wang et al. (2023). Three statements selected for analysis were adapted from Yilmaz et al. (2023) and focused on students' experiences of support and help: "Educators important to me think that I should use AI tools in my studies", "I get

help from educators when I have difficulties using AI applications.” and “I get help from peers when I have difficulties using AI applications.” The data collection occurred during the Spring semester 2024 when the online survey was distributed to students through two primary channels: 1) Compulsory Course Distribution ensuring broad participation across various study programs. 2) Instructor-Led Dissemination in selected courses. Students were informed about the purpose of the study, participation was voluntary, and informed consent was requested within the questionnaire. The demographics of the participants are presented in Table 1.

Table 1: Demographics

| Category | Group | N=160 | % |
|----------------------------|--|-------|----|
| Age Distribution | Under 20 years old | 9 | 6 |
| | 20–24 years old | 85 | 53 |
| | 25–30 years old | 29 | 18 |
| | Over 30 years old | 37 | 23 |
| Gender Distribution | Female | 113 | 71 |
| | Male | 46 | 29 |
| | Missing | | <1 |
| Education Level | Vocational Education (Secondary Level) | 33 | 21 |
| | High School | 64 | 40 |
| | University of Applied Sciences | 48 | 30 |
| | Other | 15 | 9 |

3.3 Data analysis

The statistical analysis was conducted using descriptive analysis, cross-tabulation, and the chi-square test (χ^2). The descriptive analysis included means, standard deviations, medians, and percentage distributions. Cross-tabulation was used to examine students' experiences with AI tools and the factors influencing their usage. The statistical significance of differences between groups was tested using the chi-square test (χ^2 , $p < .05$), and effect sizes were assessed with Cramér's V. Statistical analyses were conducted using IBM SPSS v. 28.0 in a pseudonymized form.

4 Results

The level of GenAI's awareness and usage among UAS students (RQ1) was measured using a Likert scale ranging from 1 to 5. Responses were classified into 'users' and 'non-users' in Table 2.

Table 2: Awareness and usage of GenAI among UAS students

| Usage of AI | Statement | N=160 | % |
|-------------|--|-------|----|
| Non-users | AI tools are new to me (1) | 15 | 9 |
| | I am aware of AI tools but have not used them (2) | 39 | 24 |
| | I am afraid to use them because I don't know if it's allowed (3) | 8 | 5 |
| Users | I occasionally use AI tools (4) | 74 | 46 |
| | I frequently use AI tools (5) | 24 | 15 |

The survey results indicate that ChatGPT (free version) was the most used GenAI tool (97%), followed by Copilot (Bing) (15%) and Google Gemini (free version) (10%). Other tools had lower usage rates (1–9%). Figure 1 illustrates the applications of AI reported by UAS students.

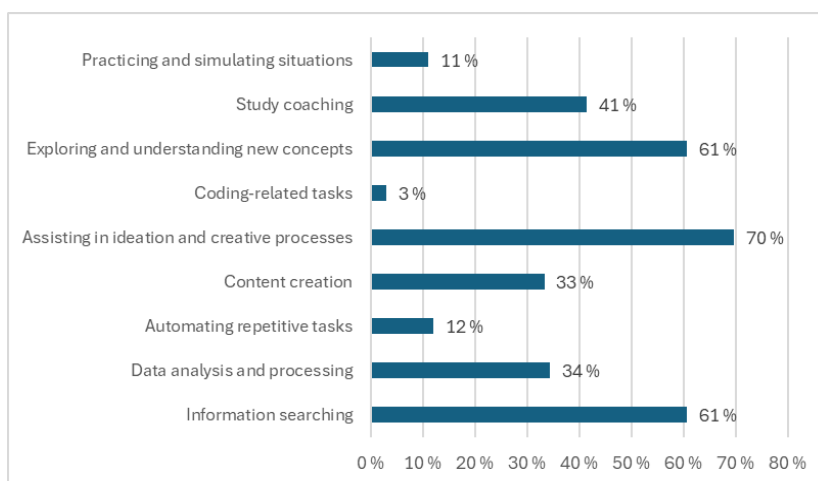


Figure 1: Applications of GenAI among UAS Students

The three most common uses of GenAI among students were assisting in ideation, information searching, and exploring new concepts, while content creation being only 33% (see Figure 1). Among those who reported using AI for other purposes (14%), the main applications included grammar and text proofreading, translation, generating self-assessment questions, simplifying tasks, and text formatting.

In line with **RQ2, student experiences regarding institutional guidelines and received support were examined**. Firstly, the focus was on institutional guidelines and practices (see Table 3). The responses were based on a Likert scale, where 1

represented "Strongly Disagree" and 5 represented "Strongly Agree". The largest standard deviations are highlighted.

Table 3: Student responses on institutional guidelines and practices regarding GenAI use

| Statement | % | | | | | | Mean | Std. Dev. |
|---|------------|----|----|----|---------------|----|------|--------------|
| | Don't Know | 1 | 2 | 3 | 4 | 5 | | |
| 1. My HE institution has a clear policy on the use of AI tools in studies. | 19 | 2 | 8 | 18 | $\frac{2}{9}$ | 24 | 3.82 | 1.048 |
| 2. My HE institution encourages the use of AI tools in studies. | 15 | 7 | 11 | 33 | $\frac{2}{4}$ | 10 | 3.23 | 1.082 |
| 3. I know what to do if I use AI tools to assist with my learning tasks (e.g., in referencing). | 16 | 13 | 17 | 19 | $\frac{1}{9}$ | 15 | 3.07 | 1.336 |
| 4. I know how the use of AI applications affects the assessment of my learning tasks. | 28 | 18 | 11 | 16 | $\frac{1}{6}$ | 12 | 2.9 | 1.42 |
| 5. My HE institution limits the use of AI tools in studies. | 28 | 7 | 18 | 25 | $\frac{1}{4}$ | 8 | 2.97 | 1.135 |
| 6. The use of AI tools in studies is prohibited at my HE institution. | 19 | 39 | 23 | 12 | 4 | 3 | 1.88 | 1.09 |

Secondly, we explored support in relation to GenAI use (see Figure 2).

A Pearson Chi-Square test was conducted to examine whether there was a significant difference in students' experiences of receiving support from educators versus friends. The results revealed a significant association between the source of support and the distribution of responses, $\chi^2(4) = 46.51$, $p < .001$. The effect size (Cramér's $V = 0.38$) indicates a moderate association, suggesting a meaningful difference in support experiences.

A series of Pearson Chi-Square (χ^2) tests were conducted to explore **relationships between students' experiences with institutional guidelines, educator support, and whether they have studied GenAI (RQ3)**. Crosstabulation analysis was first conducted to examine the relationship between whether students had or had not studied GenAI and their experiences with institutional guidelines. Chi-square tests ($p < 0.05$) revealed no statistically significant association, indicating that having studied GenAI does not influence students' experiences with the institutional guidelines presented in Table 2, (statements 1–6). Crosstabulation analysis was thereafter used to explore the relationships between the educators' encouragement

to use AI tools “Educators important to me think that I should use AI tools in my studies” and the same variables of statements concerning institutional guidelines and practices regarding GenAI use (see Table 3 statements), with Pearson Chi-Square tests conducted to assess the statistical significance of these associations.

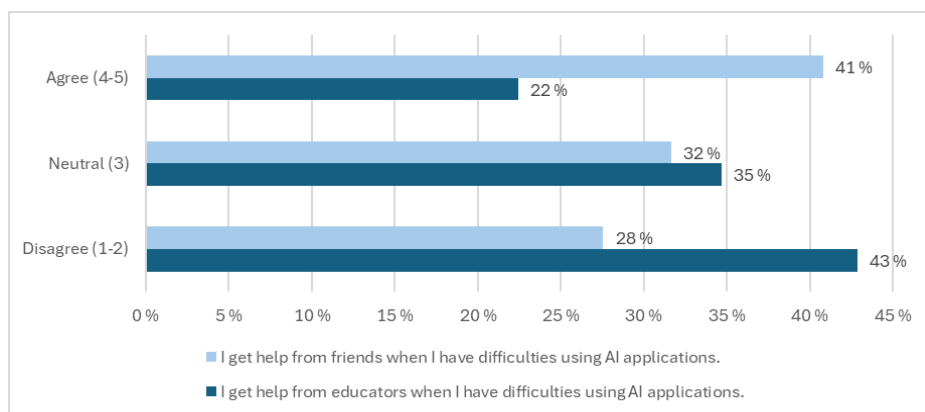


Figure 2: Student responses on receiving help from educators versus friends in using GenAI applications

The results revealed significant associations between students' perceptions of educators' encouragement to use AI tools and institutional policies. Specifically, students who believed that educators important to them supported/encouraged GenAI tool usage were more likely to report that their institution had a clear policy on AI tools, statement 1 ($\chi^2(5) = 17.130$, $p = .004$) and encouraged their use, statement 2 ($\chi^2(5) = 18.214$, $p = .003$). Additionally, there was a significant relationship between educators' encouragement of AI tool usage and students' understanding of how to proceed when using AI tools in assignments, statement 3 ($\chi^2(5) = 12.217$, $p = .032$). However, no significant association ($p < 0.05$) was found between educators' encouragement in relation to assessment and whether institutional limits or prohibits the use of AI tools (statements 4, 5 and 6).

Third crosstabulation was conducted to examine the relationship between students' perception of receiving help from educators "I get help from educators when I have difficulties using AI applications" when encountering difficulties with GenAI and the statements concerning institutional guidelines (see Table 3, statements). The findings indicate that students who perceived help from educators were significantly more likely to report knowing how to proceed when using AI tools in assignments, statement 3 ($\chi^2(5) = 14.753, p = .011$) and understanding how AI tool usage affects assignment assessments, statement 4 ($\chi^2(5) = 12.805, p = .025$). However, no significant association ($p < 0.05$) was found between educator support and students' perception of institutional guidelines, statements 1, 2, 5 or 6.

5 Discussion and conclusions

This study aimed to deepen the understanding of the current state of UAS students in using GenAI in Spring 2024. At that time, these organizations were still in the early stages of adoption, and guidelines and recommendations had only just begun to be developed. Findings showed that students are indeed using GenAI in their studies, with ChatGPT as the most used tool applied in diverse ways, including conceptual exploration and content generation (see also Digital Education Council 2024; Suonpää et al. 2024). The findings suggest that a notable proportion of students experience uncertainty regarding GenAI-related guidelines and policies at their institution. A considerable number of respondents selected neutral or 'Don't know' options, particularly in relation to policy clarity, encouragement, and implications for assessment, indicating a potential lack of clarity. Additionally, there is a noticeable absence of encouragement for students to use GenAI (see also Barrett & Pack, 2023; Hamerman et al., 2025). This underscores the need for clearer, more consistent, and more accessible instructions with no room for varying interpretations (see also M; Xiao et al. 2023; Dabis & Csáki, 2024).

Our results indicate that knowledge of handling GenAI usage in studies is incomplete, and when facing difficulties, students more often report turning to their friends than to educators, which may suggest greater accessibility or comfort with peer support. This may reflect students' perception of limited availability of timely educator support or inconsistencies in the delivery of institutional guidelines (see also Michel-Villarreal et al., 2023). Student hesitation may also be caused by fear of academic dishonesty being exposed (e.g. Luo, 2024b) since lack of clear institutional

policies contributes to ethical ambiguities (e.g. Duah & McGivern, 2024). Clear policies and guidelines ensure students' ethical and proficient use of GenAI. Our findings suggest that students who receive encouragement from educators tend to have a clearer understanding of GenAI guidelines and greater awareness of appropriate use. Guidelines are primarily communicated through educator interaction or institutional websites (see e.g. Duah & McGivern 2024). Instructions posted on intranet platforms alone appear insufficient; active educator involvement is essential for developing students' procedural knowledge and understanding of GenAI. Moreover, the findings suggest that formal study of GenAI may have limited impact if it is not clearly linked to practical use, since studying GenAI did not significantly influence students' experiences with guidelines.

Given the need for clear guidelines and the influential role of educators, enhancing their GenAI competence is essential for supporting students effectively. It is known that the extent to which educators perceive technology as effective or relevant can influence how they discuss, encourage, or guide students (see e.g. Kizilcec 2024). Guidance is essential for differentiating between 'what' the guidelines dictate and 'how' to apply these guidelines effectively. Institution guidelines are important during the transition phase when GenAI is new, as they support educators' confidence and understanding that GenAI use is pedagogically justified (see e.g. McDonald et al., 2024; Bates et al., 2020). HE educators are thus encouraged to move beyond basic use of GenAI toward more active and creative engagement, grounded in a deep understanding of its potential (Zhai, 2024; Cha et al., 2024). At a minimum, educators are expected to stay up to date with AI literacy, including both subject-specific applications of GenAI and its pedagogically sound use in teaching, learning, and assessment. To foster meaningful learning experiences and support students in navigating and managing GenAI, educators must learn to co-exist and collaborate with it, rather than resist its presence in educational contexts (see e.g. Chan & Tsi 2024).

Overall, this study relates the need for improved GenAI training and awareness among students and educators in HE (see e.g. Farrelly & Baker, 2023; Michel-Villarreal et al., 2023; Chiu et al., 2023). As a limitation, the total sample size offers only a moderate basis for future comparative analyses. The survey's focus on business and technical students may limit the applicability of the results to other fields. Further research is needed to examine the implementation of GenAI

guidelines, and the quality of support students receive—areas that will form the next phase of our analysis. Future studies should also explore educators' perceptions of GenAI and their role in its pedagogical use (also e.g. Kizilcec 2024; Chiu et al. 2023). It is important to evaluate the overall effectiveness of educational strategies in enhancing GenAI awareness across HE.

While institutional GenAI guidelines have largely focused on academic integrity, student involvement in their development has been limited. Collaborative guideline development involving all stakeholders should occur to align with the needs of both students and educators (see e.g. Cacho, 2024). HE institutions should not let the varying competencies of students, educators or academic dishonesty challenges impede GenAI adoption. Instead, they should focus on fostering continuous professional development (see also Collie & Martin, 2024). Pedagogical innovations are needed to enrich students' learning experiences and outcomes with GenAI. Therefore, teacher education programs should not only prepare future educators to use GenAI pedagogically, but also encourage them to cultivate a spirit of critical experimentation and active exploration with their students (Zhang & Zhang, 2024). There is a risk that institutional guidelines may restrict the innovative use of GenAI—particularly if they overlook its role as a learning assistant—which, in turn, may hinder the development of new forms of human–technology collaboration. HE should thus remain responsive to the evolving needs of both students and educators, ensuring that GenAI is fully leveraged for its educational potential. Through this comprehensive approach, HE is prepared to navigate the complex landscape of digital transformation.

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